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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/769,017

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Takeo Tanaami

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11/22/2010

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EXAMINER

TURK, NEIL N

ART UNIT

PAPER NUMBER

1773

NOTIFICATION DATE

DELIVERY MODE

11/22/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/769,017	<b>Applicant(s)</b> TANAAMI, TAKEO	
	<b>Examiner</b> NEIL TURK	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 33,37-40 and 42-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33,37-40 and 42-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### Remarks

This Office Action fully acknowledges Applicant's remarks filed on October 12<sup>th</sup>, 2010. Claims 33, 37-40, and 42-44 are pending. Claims 1-32, 34-36, and 41 are cancelled.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

**Claims 33, 37, 39, 40, 42, and 44** are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaami (US Patent no. 2001/0001581).

Tanaami teaches a biochip on which a plurality of samples are provided as spots or an array in a two dimensional manner on a surface of the biochip and a biochip reader.

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The biochip reader of Tanaami comprises:

a microscopic optical system consisting of a scanning confocal optical system;  
a light source 1 which irradiates excitation light simultaneously on a plurality of samples provided as spots or an array in a two dimensional manner on a surface of a biochip, and which causes the plurality of samples to emit fluorescent light different in wavelength from the excitation light (see Fig. 1);

a single optical detector 8 which detects the fluorescent light emitted by the plurality of samples as spectroscopic information; and

a separating means 3 for separating the fluorescent light emitted by the samples and developing the fluorescent light as the spectroscopic information at different locations on the single optical detector according to wavelength, the spectroscopic information being developed between images of adjacent samples among the plurality of samples, wherein the spectroscopic information is detected by the single optical detector in a two dimensional manner. Note that Fig. 1. is disclosed in Tanaami as a conventional confocal scanner, known in the art (see paragraphs [0004]-[0008]).

Regarding claims 37 and 42, the biochip reader of Tanaami further comprises a shield 4 having a plurality of apertures (pinholes) aligned with positions of each of the plurality of samples, wherein the area of spectroscopy is restricted by the apertures (see Fig. 1).

As to claims 39 and 44, wherein the separating means of Tanaami comprises a grating (i.e., beam splitter 3).

**Claims 33 and 37-40, and 42-44** are rejected under 35 U.S.C. 102(e) as being anticipated by Dietz et al., (US Patent no. 6,603,537), hereinafter "Dietz".

Dietz teaches a biochip on which a plurality of samples are provided as spots or an array in a two dimensional manner on a surface of said biochip (see for example col. 2, lines 15-16). and a biochip reader.

The biochip reader of Dietz comprises:

a microscopic optical system consisting of a scanning confocal optical system;

a light source 50 which irradiates excitation light simultaneously on a plurality of samples provided as spots or an array (capillaries) in a two dimensional manner on a surface of a biochip, and which causes the plurality of samples to emit fluorescent light different in wavelength from the excitation light;

a single optical detector 76 which detects the fluorescent light emitted by the plurality of samples as spectroscopic information; and

a separating means 58 for separating the fluorescent light emitted by the samples and developing the fluorescent light as the spectroscopic information at different locations on the single optical detector according to wavelength, the spectroscopic information being developed between images of adjacent samples among the plurality of samples (see for example col. 7, lines 38-43), wherein the spectroscopic information is detected by the single optical detector in a two dimensional manner (see for example col. 6, line 12 et seq.)

With respect to claims 36 and 41, the separating means in Dietz separates spectroscopic information from noise (see entire document). Note that this element

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contains no additional structure, therefore it is reasonable to assume the separating means 58 separates spectroscopic information from noise.

Regarding claims 37 and 42, the biochip reader of Dietz further comprises a shield having a plurality of apertures aligned with positions of each of the plurality of samples, wherein the area of spectroscopy is restricted by the apertures (see for example col. 13, lines 30-42).

As to claims 38 and 43, wherein the light source of Dietz comprises means for directing the excitation light to be irradiated onto one side of the biochip (outer capillary surface) which is opposite to a side surface wherein the plurality of samples (cells or particles) are arranged.

As to claims 39 and 44, wherein the separating means of Dietz comprises a grating or dichromatic mirror (see col. 6, line 12 et seq.)

**Claims 33, 39, 40, and 44** are rejected under 35 U.S.C. 102(e) as being anticipated by Li (US Patent Pub. no. 2003/0223059).

Li teaches a biochip on which a plurality of samples are provided as spots or an array in a two dimensional manner on a surface of said biochip and a biochip reader, see Fig. 5.

The biochip reader of Li comprises:

a microscopic optical system consisting of a scanning confocal optical system;

a light source 20 which irradiates excitation light simultaneously on a plurality of samples provided as spots or an array in a two dimensional manner on a surface of a

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biochip, and which causes the plurality of samples to emit fluorescent light different in wavelength from the excitation light;

a single optical detector 39 which detects the fluorescent light emitted by the plurality of samples as spectroscopic information; and

a separating means 38 for separating the fluorescent light emitted by the samples and developing the fluorescent light as the spectroscopic information at different locations on the single optical detector according to wavelength, the spectroscopic information being developed between images of adjacent samples among the plurality of samples, wherein the spectroscopic information is detected by the single optical detector in a two dimensional manner (see for example paragraph [0074] et seq.)

As to claims 39 and 44, wherein the separating means of Li comprises a grating (i.e., transmission grating beam splitter).

### ***Response to Arguments***

Applicant's arguments filed October 12th, 2010 have been fully considered but they are not persuasive.

**With regards to claims 33, 36, 37, 39-42, and 44** rejected under 35 USC 102(b) as being anticipated by Tanaami, Applicant traverses the rejection.

Applicant argues that although the beam splitter 3 separates excitation light and fluorescent light from each other based on the wavelength ranges thereof, it does not inherently separate the light as “spectroscopic information”. Applicant argues that

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separating light based on "spectroscopic information" is a manner of light separation which takes into account the frequency component of excitation light.

Examiner first asserts that Applicant's arguments are not commensurate in scope with the claims, as the claims do not have positive recitations toward separating by taking into account the frequency component of excitation. Additionally, Examiner argues that Applicant's arguments are drawn to process and functional limitations not afforded patentable weight given that the claims are drawn to an apparatus. As the claims are drawn to an apparatus, Applicant must distinguish over the prior art in terms of structure and not in terms of processes/functions. Here, the claims call for the structural element of a separating means for separating fluorescent light emitted from the samples and developing the fluorescent light as the spectroscopic information. As discussed above, Tanaami discloses such a structural element in the form of a beam splitter, in which the fluorescent light emitted from the samples is separated and is developed as the spectroscopic information to be detected by the optical detector. Examiner asserts that "spectroscopic information" is not a positively recited structural element of the apparatus, but is merely a functionality of the claimed separating means (the structural element).

Applicant further notes that a particular embodiment of the invention, as illustrated in figure 12, utilizes a plurality of dichroic mirrors 31-33 with different transmission wavelengths are arranged while varying the angles thereof. Examiner asserts that the claims, as currently recited, do not require such structural limitations of a plurality of dichroic mirrors arranged at varying angles and provided with different



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transmission wavelengths, and the beam splitter of Tanaami provides to read on a means for separating, as claimed.

**With regards to claims 33 and 36-44** rejected under 35 USC 102(e) as being anticipated by Dietz, Applicant traverses the rejection.

Examiner notes that the patent number for Dietz et al. has been corrected to 6,603,537 within the rejection. Applicant's arguments make clear that the applied disclosure is to that of Dietz, and the excerpts provided in the body of the Office Action are drawn from the Dietz patent.

Applicant argues that the excitation dichroic mirror 58 of Dietz, as with that of Tanaami, does not inherently separate light as "spectroscopic information". Examiner asserts, as likewise-stated above, that Applicant has failed to provide an argument over the applied prior art of Dietz in terms of a structural distinction between the applied prior art and the present claims. Applicant has claimed a separating means for separating, as recited in claim 1, as the structural element to the biochip reader, and Dietz provides to disclose a dichroic mirror 58, which reads on the structural limitation of a separating means for separating, as claimed (see claims 33, 39 (grating or dichromatic mirror), and 40).

Applicant further argues that in Dietz the object to be measured is not a biochip. Applicant additionally argues that Dietz does not observe images on the entire surface of a biochip at one time. Examiner argues that such arguments are drawn to intended use and process limitations not afforded patentable weight in a device claim. Applicant

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has not pointed out the structural distinction(s) between the prior art of Dietz and the current claims. Examiner argues that, as discussed above, Dietz discloses all of the positively recited structural elements of the device.

**With regards to claims 33, 36, 39, 40, 41, and 44** rejected under 35 USC 102(e) as being anticipated by Li, Applicant traverses the rejection.

Applicant argues that, in Li, spectroscopic information is arranged vertically below a sample. Applicant argues that in Li each row 700 (see fig. 6) of spectroscopic information is read out sequentially row-by-row. The rows 700 are arranged two-dimensionally on a substrate 704, but the reader does not read out the spectroscopic information from all sites on the substrate 704. Applicant argues that in Li the entire array cannot be read out simultaneously. Applicant argues that it is thereby necessary in Li to repeat image processing every time images from sites from one row are taken.

Examiner argues that Applicant's arguments are not commensurate in scope with the claims. Applicant's arguments are drawn to process limitations/method steps that are both not present within the current claims and are not afforded patentable weight within the current device claims. As Applicant's claims are drawn to a device, Applicant must distinguish over the prior art of record in terms of structure and not in terms of processes/functions. Applicant has failed to present a structural difference between the prior art of Li and that of the current claims. Examiner maintains that the prior art of Li reads on the claims, as discussed above in the body of the action.

Applicant further argues that the claims have been amended to recite that the biochip reader allows the spectroscopic information to be developed “between images of adjacent samples among said plurality of samples”. Applicant argues that such language is patentable over Li at least because the functional language of the claim imparts structure which Li lacks.

Examiner argues that such a recitation has not added any structural elements to the device and Li provides to disclose all of the positively claimed structural elements of the device. Examiner asserts that such a recitation is drawn to a capability of the device, and given that Li discloses all of the positively recited structural limitations of the claims, Li is said to be fully capable of the functionality recited. Applicant must provide a structural distinction between the prior art and the claims in order to distinguish over the art of record. For example, is there an additional element or particular structural relationship within elements of the device that provide for developing images in such a manner?

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NEIL TURK whose telephone number is (571)272-8914. The examiner can normally be reached on M-F, 9-630.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NT

/Jill Warden/  
Supervisory Patent Examiner, Art Unit 1773